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# United States Department of Agriculture.

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## EXHIBIT OF FOREST PLANTING IN WOODLOTS AT THE LOUISIANA PURCHASE EXPOSITION.

To illustrate different methods of forest planting in woodlots the Bureau of Forestry has prepared, as a part of its outdoor exhibit at the Louisiana Purchase Exposition, a series of plats, each 24 feet square, planted with different species and mixtures suitable for different parts of the United States.

Woodlot plantations are made primarily for the production of fuel and timber, rather than for protection. In distinction from a windbreak, in which, since the first requirement is an effective barrier against the wind's force, the trees may often be unevenly distributed, or too closely planted for the best development of their form, the individuals of each species in a woodlot are distributed over the ground as evenly as possible, considering the necessity for cultivation, and all the trees are set at the density which will secure the largest yield of timber. In either kind of plantation the spacing between the rows will depend very largely upon whether or not long-continued cultivation is desirable, and the amount of cultivation necessary is conditioned upon the region in which the plantation is located.

The choice of species for a windbreak is made more with reference to their constitutional vigor, size and density of crown, and immunity from climatic injuries than to the quality of their timber, which in the case of the woodlot becomes the determining consideration. The woodlot plantations at the Exposition representing different regions have been made as types of the best combinations, but are not intended to exhaust the possibilities; since limitations of space make it impossible to show all of the many hundreds of useful mixtures that might have been devised.

There is an erroneous popular impression abroad that the value of seedlings for planting is directly proportional to their size. Small to medium-sized seedlings cost less, are less expensive to plant, and are more certain to grow than the larger sizes, while the use of the latter does not secure any larger returns at the time of the maturity of the crop. A good size for planting is that used in the Exposition woodlot plats, 12 to 18 inches tall.

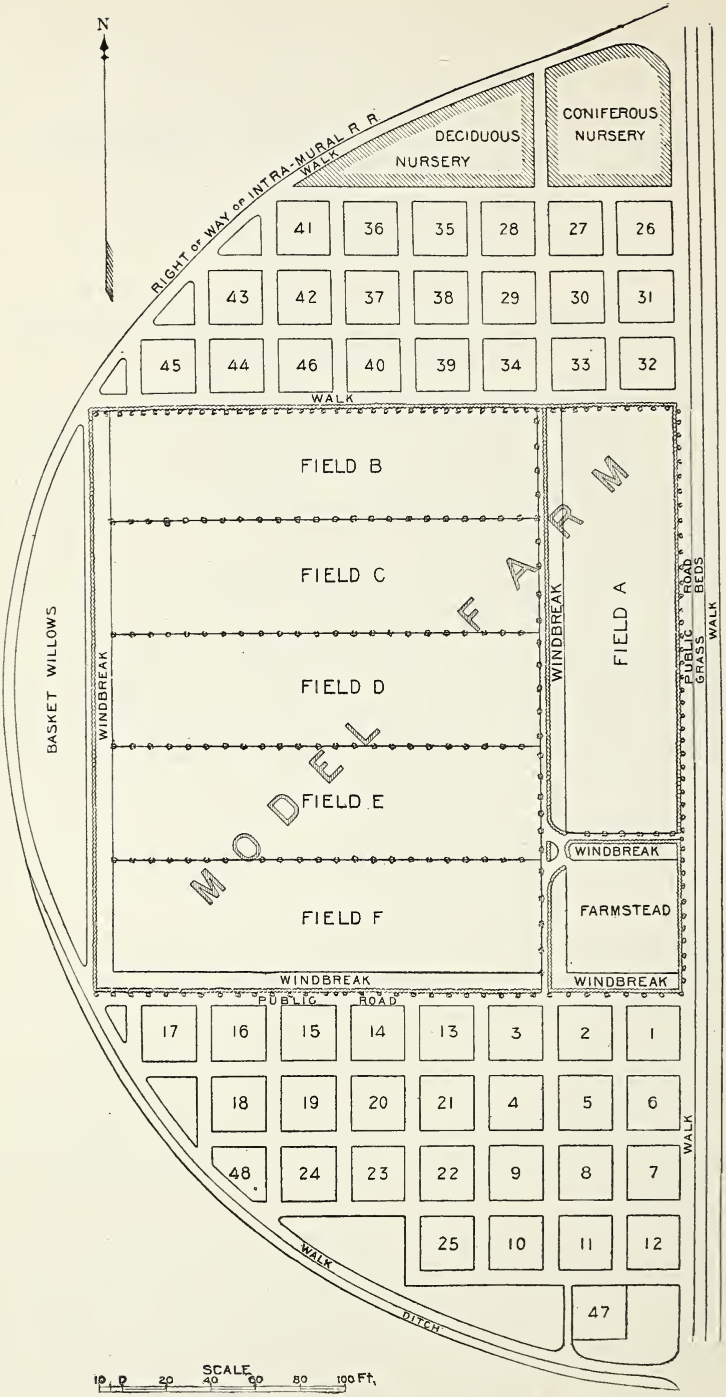

Fig. 1.—Plan of the forest planting exhibit, Bureau of Forestry, plats 1 to 48 being woodlot plantations.

The figure on page 2 gives the location of each wood plantation with reference to the rest of the exhibit.

Plat 1, planted 4 feet apart with equal parts of hackberry and green ash, is intended to illustrate one of the best broadleaf mixtures for the arid plains from Texas to North Dakota. The ash will produce valuable timber, while the hackberry will furnish fuel from thinnings, afford shade, and add humus to the soil, thus improving the forest conditions of the locality. The distance of 4 feet apart will allow the trees to establish a forest cover at the earliest possible time, making long-continued cultivation unnecessary.

Plat 2 is planted 4 feet by 8 feet, with honey locust and white elm in equal proportions. This mixture is composed of very hardy species, suited to the western prairies of Kansas, Nebraska, Oklahoma, and Texas. The unequal spacing in one direction is to allow of long-continued cultivation, since it is very frequently advisable in this region to prolong the period of cultivation, even to the maturity of the crop, to conserve the soil moisture. The honey locust, which grows very rapidly, will afford valuable timber for fence posts and other farm uses, while the more slowly growing elm, as an understory, will furnish shade and increase the humus in the soil.

Plat 3 is planted 4 feet by 6 feet, with a mixture of green ash and white elm in equal proportions. This mixture is adapted to a large region in the semiarid plains, from Texas to Canada. Its good qualities are very similar to those of the plantation on plat 1, the elm taking the place of the hackberry. As in the mixture on plat 2, the unequal spacing will allow long-continued cultivation.

The trees on plat 4 are planted 4 feet apart, and consist of equal proportions of bur oak and hackberry. This mixture is suited to the high prairies of the semiarid plains from Kansas to Canada, and is composed of the hardiest deciduous trees indigenous to the region. These species, however, grow very slowly, their slow growth being one of their good qualities, since it enables them to persist in soils so sterile that other species would be absolutely out of the question.

Plat 5 is planted with red cedar and western yellow pine in equal proportions. This plantation illustrates the use of the hardiest coniferous species suited to the semiarid plains east of the Rocky Mountains. The trees are planted 4 feet apart each way, in order to secure the very desirable shade and forest litter so necessary to the establishment of forest conditions. The cedar can be cut out and used for fence posts, and the pine left as the permanent stand. This mixture would be just as desirable for a windbreak as for a woodlot plantation.

Plat 6 has been planted 4 feet by 6 feet with equal proportions of black locust and Russian mulberry, representing a mixture suited to the southern half of the semiarid plains. Both of these species afford excellent timber for fence posts, are very drought resistant, and grow rapidly. The locust grows somewhat faster than the mulberry, and will form the upper story, while the latter will shade the ground and assist in forcing the locust into a straight growth. The unequal spacing will allow of long-continued cultivation in one direction, which is very desirable in the semiarid regions.

Plat 7 has been planted 4 feet by 8 feet with equal proportions of white elm and black locust. This mixture is suited to the southern half of the Middle West. The locust is the more rapid-growing species, and will furnish posts and fuel at an early date, while the elm will maintain conditions of shade and litter necessary for keeping up the quality of the forest soil. The wide spacing in one direction is to facilitate cultivation.

Plat 8 has been planted 4 feet by 8 feet with an equal mixture of black locust and Osage orange (bodark), and is suited to southern Kansas, Oklahoma, and northern Texas. This mixture has the same advantages as the plantation on plat 6. The Osage orange, however, furnishes wood peculiarly well adapted for fence posts, for which in the estimation of the farmers of the region it holds the first place. The wide spacing in one direction will allow of cultivation, even after the thorny Osage orange has grown to considerable size.

Plat 9 is planted 4 feet by 8 feet with Osage orange (bodark) and Russian mulberry in equal proportions. This mixture also is adapted for the prairies of the southern half of the Middle Western States. Wherever the black locust is infested with borers, the use of the mulberry and bodark for the production of fence posts may be the most feasible solution of the difficulty.

Plat 10 has been planted 4 feet apart with western yellow pine and jack pine in equal proportions. This mixture of very hardy coniferous species is adapted to sandy, poor soil in the prairies west of the Mississippi and north of the fortieth parallel, where long-continued cultivation is not practicable. The jack pine is the temporary species, and should be cut out whenever it begins to interfere with the growth of the yellow pine, which is designed to form the final stand.

Plat 11 is planted 4 feet by 8 feet with black locust, Osage orange, Russian mulberry, and honey locust in equal proportions. This mixture is adapted to the semiarid prairies of the South Central States, and is given chiefly for the purpose of illustrating a mixture of more than two species. All these trees grow rapidly, endure great extremes of drought, and furnish wood well adapted for fence posts.

Plat 12 is planted 4 feet by 6 feet with pure black locust. This method of planting is suited to a large area of country south of the fortieth parallel of latitude, wherever the black locust thrives. The wide spacing in one direction is to facilitate cultivation.

Plat 13 is planted 4 feet apart with boxelder and cottonwood in equal proportions. This mixture is suited to the river bottoms of the prairie States north of the fortieth parallel of latitude. The boxelder forms the understory, shading the ground completely, while the rapid-growing cottonwood, pushing up for light, produces the valuable timber. This mixture is not adapted to dry, high prairie land, and should never be planted except where the roots of the trees can reach inexhaustible supplies of moisture. These species endure without injury the severe cold of Manitoba.

Plat 14 has been planted 4 feet apart with Scotch pine and red cedar in equal proportions. This mixture is suited to the humid upland prairies of the Middle Western States east of the ninety-seventh meridian.

Plat 15 has been planted 4 feet by 8 feet with coffee-tree and black walnut in equal proportions. This combination is suited to the fertile river bottoms of the Middle Western States from southern Minnesota to Texas. The wide spacing in one direction will allow of long-continued cultivation, which with these species will be necessary; since their open foliage, admitting a large amount of light, permits of weedy growth on the forest floor.

Plat 16 has been planted with common cottonwood 6 feet by 8 feet. This method of planting is adapted to the sandy river banks of the whole Mississippi Valley. The wide spacing permits long-continued and thorough cultivation, which is necessary with light-foliaged trees such as the cottonwood. The use of this species is recommended on sandy land where inexhaustible supplies of moisture are within reach of the roots of the trees, since the cottonwood will probably produce more cubic feet of wood per acre in a given time than any other forest tree adapted to the region.

Plat 17 is planted with white willow 4 feet by 8 feet. The willow is adapted to planting in the prairie States north of the forty-first parallel, and makes its best growth on sandy river bottoms in situations very similar to those demanded by the cottonwood. For certain purposes on the farm, willow timber is more useful than cottonwood; since, when well seasoned, it may be used for poles or fence posts. For this reason its planting in limited quantities is advisable.

Plat 18 is planted with hardy catalpa 4 feet by 8 feet. This species is well adapted to the rich river bottoms of the Middle Western States south of the forty-first parallel. Its timber makes one of the best fence posts known, and its rapid growth on good land causes it to be a favorite species with planters. It has been recommended, however, in many situations where its results will be disappointing. It will not thrive on high, dry land with impermeable subsoils.

Plat 19 has been planted 4 feet by 8 feet with black walnut and hardy catalpa in equal proportions. The trees of this mixture are well adapted to the fertile river bottoms of the Mississippi Valley south of the forty-first parallel. The catalpa is recommended because of its rapidity of growth and early maturity, while the walnut, developing into large proportions, will form a permanent forest on the planting site long after the disappearance of the catalpa.

Plat 20 has been planted 4 feet by 8 feet with black walnut. This species is adapted to planting on fertile soils from southern Minnesota to Texas, and from West Virginia to Kansas. It produces very valuable cabinet wood. The heartwood of the walnut is very durable in contact with the soil, forming one of the best fence-post timbers we have. Wide spacing between the rows allows of long continued cultivation, while at the same time the close spacing in the rows secures a sufficient density for the production of well-shaped trees.

Plat 21 has been planted 6 feet by 6 feet with pecan and black walnut in equal proportions. This mixture is adapted to the river bottoms of southern Kansas, Indian Territory, Oklahoma, and Texas. The wood of the pecan possesses many of the valuable qualities of our hickories, while the species grows fairly rapidly. Its association with the walnut will make an excellent long-lived plantation where early maturity of the product is not absolutely essential.

Plat 22 has been planted 6 feet by 6 feet with pecan. This species is adapted to the rich river bottoms in the southern half of our country east of the Rocky Mountains, and may often be profitably planted for both timber and nuts.

Plat 23 has been planted 4 feet by 8 feet with hardy catalpa and Russian mulberry. This mixture is suited to the river valleys south of the forty-first parallel and east of the ninety-eighth meridian. The Russian mulberry is introduced into the plantation in order that it may assist in pruning the catalpa, thereby compelling that tree to grow clean and straight.

Plat 24 is planted 6 feet by 8 feet with sycamore and Carolina poplar in equal proportions. These species are very hardy, rapid-growing trees, adapted to the river bottoms of the Middle West south of the forty-fifth parallel of latitude and east of the Rocky Mountains.

Plat 25 is planted 4 feet by 4 feet with slippery elm and black cherry in equal proportions. These trees are adapted to the region north of the thirty-eighth parallel and south of the Great Lakes and Minnesota and east of the Missouri River. The mixture should be limited to moist, well-drained soils.

Plat 26 is planted 4 feet by 4 feet with arborvitæ and white spruce in equal proportions. This mixture is suited to swampy or moist, untillable land in the Northern States east of the Mississippi. The arborvitæ produces an excellent fence post or telegraph pole, and when ripe for these uses may be cut out, leaving the spruce as the permanent stand.

Plat 27 has been planted 4 feet by 8 feet with tamarack and balsam fir in equal proportions. This mixture is suited to moist land in the New England and Lake States. The tamarack produces an excellent fence post or telegraph pole and at maturity may be cut out, leaving the fir in possession of the soil. The wide spacing in one direction will allow of desirable cultivation between the rows since the tamarack is very much influenced in its growth by the soil conditions; and thrives very much better if given good cultivation.

Plat 28 is planted 4 feet by 4 feet with red pine and jack pine in equal proportions. These species are particularly well adapted to sandy land in the Lake States. The close spacing will early bring about conditions of cover and soil promoting the thrift of the plantation and obviating the need of cultivation. The jack pine should be removed from the plantation as soon as it begins injuriously to crowd its associate, since the red pine is the long-lived species designed to produce the final forest stand.

Plat 29 has been planted 4 feet by 8 feet with Norway spruce and white pine in equal proportions. This mixture is particularly well adapted to the region east of the Mississippi originally inhabited by the white pine. The spruce forms an understory, and, by contributing its shade and leaf litter in association with the pine, improves the quality of the soil.

Plat 30 has been planted 6 feet by 6 feet with sugar maple and white pine in equal proportions. This is a very valuable mixture for the North Atlantic States and the Appalachian Mountains, and for the Ohio Valley as far south as the thirty-ninth parallel. The maple is intended to form the understory, while the pine will produce the overstory. Large plantations have been made after this pattern under the instruction of the Bureau of Forestry in a number of the New England States.

Plat 31 is planted 4 feet by 6 feet with chestnut and white pine in equal proportions. This mixture is suited to pine lands in the middle Appalachian Mountains, and in the Ohio Valley as far west as the Lake Michigan basin. The chestnut, in association with the pine, will serve for the production of a temporary income; since it may be harvested early for posts and poles, while the pine will make the permanent stand, maturing sawlogs when eighty to one hundred years old.

Plat 32 is planted 4 feet by 6 feet with half Norway spruce and equal parts of hemlock and European larch. This mixture is suited to sandy, poor land in the Northeastern States. The larch will form an overstory, while the spruce and hemlock as an understory will afford shade, thus improving the quality of the soil.

Plat 33 is planted 6 feet by 6 feet with white pine. This species is adapted for commercial plantations in the New England and Lake States. Closer spacing than is here illustrated would be very desirable if it were not for the fact that the cost of the nursery stock makes denser planting impracticable. For the production of good timber a better spacing would be 4 or 5 feet apart each way.

Plat 34 is planted 4 feet by 6 feet with European larch. This method of planting is adapted to the Northern States from New York to the Dakotas. The larch is peculiarly well suited for the production of fence posts, telegraph poles, railroad ties, and other timbers useful on the farm.

Plat 35 is planted 4 feet by 6 feet with chestnut and red oak in equal proportions. This combination is adapted to the Ohio Valley. Both species used in this mixture grow very rapidly, and produce excellent timber. The wide spacing will permit good cultivation.

Plat 36 is planted 4 feet by 6 feet with yellow poplar, sugar maple, chestnut, and hemlock in equal proportions. This mixture is adapted to the southern New England States and the middle Appalachian Mountains. The maple and hemlock will form an understory, while the chestnut and poplar will produce an overstory and ultimately mature into large trees well adapted for lumber.

Plat 37 is planted 4 feet by 6 feet with equal proportions of white ash and red oak. This mixture, for the production of saw timber, is suited to the middle and southern Appalachians and to the Ohio Valley.

Plat 38 is planted 4 feet by 4 feet with red oak, and illustrates a method of planting adapted to the middle Appalachian Mountains and the Ohio Valley. The close planting will obviate the necessity of long-continued cultivation.

Plat 39 is planted 6 feet by 6 feet with equal proportions of sugar maple and chestnut. This mixture is adapted to the Atlantic coast from Massachusetts to Virginia, and to the Appalachian region south of the Adirondacks. The chestnut will form the overstory, while the sugar maple as an understory will shade and enrich the soil.

Plat 40 is planted 6 feet by 8 feet with chestnut, and illustrates a method suited to southern New England, the Appalachian Mountains, and the Ohio Valley. The chestnut is the most rapid-growing broadleaf tree adapted to the region, and on good soil, where long-continued cultivation is possible, will reach a large size in a short time.

Plat 41 is planted 6 feet by 8 feet with equal proportions of yellow poplar and sweet gum. This mixture is peculiarly well adapted to the moist flats in Virginia, North Carolina, western Tennessee, and western Kentucky. The poplar is intended to form the overstory, while the gum will serve as an understory, affording shade to the forest floor.

Plat 42 was planted 6 feet by 8 feet with loblolly and longleaf pine in equal proportions. This mixture is well adapted to abandoned farm lands in the Southern States where the altitude is not greater than 1,500 feet above sea level. The wide spacing is advised chiefly because nursery stock of these species is expensive and difficult to obtain. If the seedlings were available, closer spacing would be advisable in order that the young trees might, by crowding, form clean, straight boles. Owing to a lack of the nursery stock, white pine and

European larch planted 6 feet by 6 feet were substituted on this plat instead of the southern pines. The substituted mixture is well adapted to the New England and Lake States.

Plat 43 was designed to be planted with loblolly pine 4 feet apart to illustrate a very practicable method suited to the abandoned farm lands with moist soil of the Southern States. Owing to lack of the nursery stock, this plat was planted 6 feet by 6 feet with Monterey cypress, which is well adapted for windbreaks in southern California.

Plat 44 has been planted 6 feet by 8 feet with blue gum (*Eucalyptus globulus*), illustrating a method of planting suited to the orange-growing regions of California. This species is the most rapid-growing forest tree in cultivation on the Pacific coast.

Plat 45 has been planted 4 feet by 4 feet with sugar gum (*Eucalyptus corynocalyx*), illustrating a method of planting suited to the arid portions of southern California. This gum, while not as rapid in its growth as blue gum, possesses many valuable qualities. Its wood promises to be of great value for the manufacture of wagons, carriages, farm implements, etc.

Plat 46 is planted 6 feet by 8 feet with red gum (*Eucalyptus rostrata*), illustrating another method of planting suited to southern California. The wood of this species is well adapted to the uses of the cabinet maker, resembling mahogany in many of its qualities. The three species of eucalyptus illustrated in the exhibit are practically all of this group that have been proved to have value for economic uses in this country. The eucalypts should not be planted where they will be exposed to more than 15 or 20 degrees of frost.

Plat 47 was planted 6 feet by 8 feet with black locust and Oregon maple in equal proportions. This mixture is adapted to the semiarid portions of eastern Oregon and southeastern Washington. Owing to failure of the Oregon maple, the sugar maple was substituted in this plantation.

Plat 48 is planted 4 feet by 4 feet with white oak, illustrating a method of planting adapted to the Appalachian Mountains. This species is one of our most valuable timber trees, but grows so slowly that the advisability of its planting for economic purposes is limited by the fact that in many cases the land can be made to produce a higher income by the cultivation of some other species.

*Tabulated descriptions of woodlot plantations.*

| No. of plat. | Region to which adapted. | Species planted. | Proportion. | Number of trees of each species per acre. | Distance apart. |
|---|---|---|---|---|---|
| | | | | | *Feet.* |
| 1 | Texas to North Dakota, on arid plains | Hackberry | ½ | 1,360 | 4 by 4 |
| | | Green ash | ½ | 1,360 | |
| 2 | Western Kansas and Nebraska to Texas, on high prairies. | Honey locust | ½ | 680 | 4 by 8 |
| | | White elm | ½ | 680 | |
| 3 | Texas to Canada, on semiarid western plains. | Green ash | ½ | 908 | 4 by 6 |
| | | White elm | ½ | 908 | |
| 4 | Kansas to Canada, on semiarid plains | Hackberry | ½ | 1,360 | 4 by 4 |
| | | Bur oak | ½ | 1,360 | |
| 5 | North Dakota to Staked Plains | Red cedar | ½ | 1,360 | 4 by 4 |
| | | Western yellow pine | ½ | 1,360 | |
| 6 | Western Nebraska to eastern New Mexico | Black locust | ½ | 908 | 4 by 6 |
| | | Russian mulberry | ½ | 908 | |
| 7 | Southern half of Middle West | Black locust | ½ | 680 | 4 by 8 |
| | | White elm | ½ | 680 | |
| 8 | Southern Kansas, Oklahoma, and northern Texas. | Black locust | ½ | 680 | 4 by 8 |
| | | Osage orange | ½ | 680 | |
| 9 | Upland prairies of Middle Western States. | Osage orange | ½ | 680 | 4 by 8 |
| | | Russian mulberry | ½ | 680 | |
| 10 | Poor sandy land of northern Prairie States. | Western yellow pine | ½ | 1,360 | 4 by 4 |
| | | Jack pine | ½ | 1,360 | |
| 11 | South Central States, on semiarid prairies. | Black locust | ¼ | 340 | 4 by 8 |
| | | Osage orange | ¼ | 340 | |
| | | Russian mulberry | ¼ | 340 | |
| | | Honey locust | ¼ | 340 | |
| 12 | South Central States | Black locust | ........ | 1,815 | 4 by 6 |
| 13 | Northern Prairie States, on river bottoms. | Boxelder | ½ | 1,360 | 4 by 4 |
| | | Cottonwood | ½ | 1,360 | |
| 14 | Eastern Kansas, Nebraska, Iowa, and Missouri, on upland prairies. | Scotch pine | ½ | 1,360 | 4 by 4 |
| | | Red cedar | ½ | 1,360 | |
| 15 | Minnesota to Texas, on rich river bottoms | Coffee tree | ½ | 680 | 4 by 8 |
| | | Black walnut | ½ | 680 | |
| 16 | Mississippi Valley, on sandy river bottoms. | Cottonwood | ........ | 908 | 6 by 8 |
| 17 | Moist soil on prairies of Middle West, north of forty-first parallel. | White willow | ........ | 1,360 | 4 by 8 |
| 18 | Rich river bottoms of Middle West | Hardy catalpa | ........ | 1,360 | 4 by 8 |
| 19 | .....do | Black walnut | ½ | 680 | 4 by 8 |
| | | Hardy catalpa | ½ | 680 | |
| 20 | Minnesota to Texas and West Virginia to Kansas, in fertile soil. | Black walnut | ........ | 1,360 | 4 by 8 |
| 21 | Southern Kansas, Indian Territory, Oklahoma, and Texas, on rich river bottoms. | Pecan | ½ | 605 | 6 by 6 |
| | | Black walnut | ½ | 605 | |
| 22 | South of thirty-eighth parallel, east of Rocky Mountains. | Pecan | ........ | 1,210 | 6 by 6 |
| 23 | South of forty-first parallel, east of ninety-eighth meridian, on rich river bottoms. | Hardy catalpa | ½ | 680 | 4 by 8 |
| | | Russian mulberry | ½ | 680 | |
| 24 | Middle Western river bottoms | Sycamore | ½ | 454 | 6 by 8 |
| | | Carolina poplar | ½ | 454 | |
| 25 | Northern half of Mississippi Valley | Slippery elm | ½ | 1,360 | 4 by 4 |
| | | Black cherry | ½ | 1,360 | |
| 26 | Northern States east of Mississippi, in swampy soil. | Arborvitæ | ½ | 1,360 | 4 by 4 |
| | | White spruce | ½ | 1,360 | |
| 27 | New England and Lake States, in moist soil. | Tamarack | ½ | 680 | 4 by 8 |
| | | Balsam fir | ½ | 680 | |
| 28 | Lake States, sandy barrens | Red pine | ½ | 1,360 | 4 by 4 |
| | | Jack pine | ½ | 1,360 | |
| 29 | North of thirty-ninth parallel and east of Mississippi. | Norway spruce | ½ | 680 | 4 by 8 |
| | | White pine | ½ | 680 | |
| 30 | North Atlantic States, Appalachians, and Ohio Valley. | Sugar maple | ½ | 605 | 6 by 6 |
| | | White pine | ½ | 605 | |
| 31 | Between thirty-eighth and forty-third parallels, Atlantic to Michigan. | Chestnut | ½ | 908 | 4 by 6 |
| | | White pine | ½ | 908 | |
| 32 | Northeastern States, sandy, poor land | Norway spruce | ½ | 908 | 4 by 6 |
| | | Hemlock | ¼ | 454 | |
| | | European larch | ¼ | 454 | |
| 33 | New England and Lake States | White pine | ........ | 1,210 | 6 by 6 |
| 34 | Northern States, from New York to the Dakotas. | European larch | ........ | 1,815 | 4 by 6 |
| 35 | Ohio Valley | Chestnut | ½ | 908 | 4 by 6 |
| | | Red oak | ½ | 908 | |
| 36 | Southern New England and Middle Appalachians, in good soil. | Yellow poplar | ¼ | 454 | 4 by 6 |
| | | Sugar maple | ¼ | 454 | |
| | | Chestnut | ¼ | 454 | |
| | | Hemlock | ¼ | 454 | |
| 37 | Middle and Southern Appalachians and Ohio Valley. | White ash | ½ | 908 | 4 by 6 |
| | | Red oak | ½ | 908 | |
| 38 | Middle Appalachians and Ohio Valley | Red Oak | ........ | 2,720 | 4 by 4 |

*Tabulated descriptions of woodlot plantations*—Continued.

| No. of plat. | Region to which adapted. | Species planted. | Proportion. | Number of trees of each species per acre. | Distance apart. |
|---|---|---|---|---|---|
| | | | | | *Feet.* |
| 39 | Atlantic coast from Massachusetts to Virginia, and Appalachians south of Adirondacks. | Sugar maple | $\frac{1}{2}$ | 605 | 6 by 6 |
| | | Chestnut | $\frac{1}{2}$ | 605 | |
| 40 | Southern New England, Appalachian region, and Ohio Valley. | Chestnut | | 908 | 6 by 8 |
| 41 | Virginia, North Carolina, western Tennessee, and Kentucky, on moist land. | Yellow poplar | $\frac{1}{2}$ | 454 | 6 by 8 |
| | | Sweet gum | $\frac{1}{2}$ | 454 | |
| 42 | Southern States, on abandoned farms | Loblolly pine | $\frac{1}{2}$ | 454 | 6 by 8 |
| | | Longleaf pine | $\frac{1}{2}$ | 454 | |
| *a* 42 | New England and Lake States | White pine | $\frac{1}{2}$ | 605 | 6 by 6 |
| | | European larch | $\frac{1}{2}$ | 605 | |
| 43 | South Atlantic and Gulf States, in moist soil. | Loblolly pine | | 2,720 | 4 by 4 |
| *a* 43 | Southern California | Monterey cypress | | 1,210 | 6 by 6 |
| 44 | California, orange-growing districts | Blue gum | | 908 | 6 by 8 |
| 45 | South California, arid portions | Sugar gum | | 2,720 | 4 by 4 |
| 46 | Southern California | Red gum | | 908 | 6 by 8 |
| 47 | Washington and Oregon, semi-arid portions. | Black locust | $\frac{1}{2}$ | 454 | 6 by 8 |
| | | Oregon maple | $\frac{1}{2}$ | 454 | |
| 48 | Appalachian region | White oak | | 2,720 | 4 by 4 |

[a] By substitution.

Approved:

JAMES WILSON,
*Secretary.*

WASHINGTON, D. C., *April 30, 1904.*